

DOCKET NO.: 246976US0/ssa

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

IN RE APPLICATION OF:

GROUP: 1764

Juergen HERWIG, et al.

SERIAL NO: 10/790,094

EXAMINER: DANG, THUAN D.

FILED: March 2, 2004

FOR: SELECTIVE HYDROGENATION OF CYCLODODECATRIENE TO  
CYCLODODECENE

**RESUBMISSION OF DOCUMENTS FILED ON MAY 2, 2007**

Office of Initial Patent Examination  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

In the matter of the above-identified application, the following document(s) were submitted to the United States Patent and Trademark Office on May 2, 2007:

PTO Cover Letter, Amendment under 37 CFR 1.312 and date-stamped filing receipt (filed May 2, 2007).

Copies of the document(s) are re-submitted herewith since they do not appear in the Image File Wrapper for the above-identified application.

Respectfully Submitted,

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OSMM&N File No. 246976US0

Dept.: Chemical

By: NFO/FDV/esw

Serial No. 10/790,094

In the matter of the Application of: Juergen HERWIG, et al.

For: SELECTIVE HYDROGENATION OF CYCLODODECATRIENE TO  
CYCLODODECENE

Due Date: 06/06/07

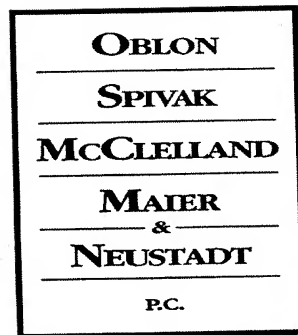
The following has been received in the U.S. Patent Office on the date stamped her

- Dep. Acct. Order Form
- PTO Cover Letter
- Amendment under 37 CFR 1.312



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Docket No.: 246976US0

ATTORNEYS AT LAW

COMMISSIONER FOR PATENTS  
ALEXANDRIA, VIRGINIA 22313

RE: Application Serial No.: 10/790,094  
Applicants: Juergen HERWIG, et al.  
Filing Date: March 2, 2004  
For: SELECTIVE HYDROGENATION OF  
CYCLODODECATRIENE TO CYCLODODECENE  
Group Art Unit: 1764  
Examiner: DANG, D.  
Allowed: March 6, 2007

SIR:


Attached hereto for filing are the following papers:

**AMENDMENT UNDER 37 CFR 1.312**

Our check in the amount of \$0.00 is attached covering any required fees. In the event any variance exists between the amount enclosed and the Patent Office charges for filing the above-noted documents, including any fees required under 37 C.F.R. 1.136 for any necessary Extension of Time to make the filing of the attached documents timely, please charge or credit the difference to our Deposit Account No. 15-0030. Further, if these papers are not considered timely filed, then a petition is hereby made under 37 C.F.R. 1.136 for the necessary extension of time. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

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Appln. No. 10/790,094  
Amendment under 37 CFR 1.312

DOCKET NO: 246976US0

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF :  
JUERGEN HERWIG, ET AL : GROUP: 1764  
SERIAL NO: 10/790,094 : ALLOWED: MARCH 6, 2007  
FILED: MARCH 2, 2004 : EXAMINER: DANG, D.  
FOR: SELECTIVE HYDROGENATION OF :  
CYCLODODECATRIENE TO  
CYCLODODECENE

AMENDMENT UNDER 37 CFR 1.312

COMMISSIONER FOR PATENTS  
ALEXANDRIA, VIRGINIA 22313

SIR:

Please amend the above-identified application under the provisions of 37 CFR 1.312  
as follows:

**Amendments to the Claims** are reflected in the listing of claims which begins on  
page 2 of this paper.

**Remarks/Arguments** begin on page 7 of this paper.

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**Claim Amendments**

This listing of claims will replace all prior versions, and listings, of claims in the application.

**Listing of Claims**

Claim 1. (Previously Presented) A process for preparing cyclododecene, comprising:  
contacting at least one starting material selected from the group consisting of cyclododecatriene, cyclododecadiene and mixtures thereof, in the gas-phase with a catalyst in a fixed-bed reactor in the presence of hydrogen, thereby preparing said cyclododecene product,

wherein the Bodenstein number in the fixed-bed reactor is greater than 100.

Claim 2. (Original) The process as claimed in claim 1, wherein the Bodenstein number for the process in the fixed-bed reactor is greater than 500, in particular greater than 1000.

Claim 3. (Original) The process as claimed in claim 1, wherein the Reynolds number is greater than 10.

Claim 4. (Previously Presented) The process as claimed in claim 1, wherein the throughput per amount of catalyst ranges from 15 to 500 g, of at least one starting material selected from the group consisting of cyclododecatriene, cyclododecadiene and mixtures thereof per gram of Pd•h.

Claim 5. (Original) The process as claimed in claim 1, wherein the catalyst is in the form of a shaped body.

Claim 6. (Previously Presented) The process as claimed in claim 1, wherein the catalyst is in the form of a shaped body and the shaped body comprises more than 90 % by weight of support material, based on the total weight of the shaped body.

Claim 7. (Original) The process as claimed in claim 1, wherein the catalyst is in the form of a shaped body and the shaped body is essentially round.

Claim 8. (Original) The process as claimed in claim 1, wherein the catalyst is in the form of a shaped body and has a diameter of more than 0.5 mm.

Claim 9. (Original) The process as claimed in claim 1, wherein the catalyst is present on a support material and is in the form of a shaped body comprising  $\gamma$ -aluminum oxide.

Claim 10. (Original) The process as claimed in claim 1, wherein the catalyst is present on a non-metal support material.

Claim 11. (Original) The process as claimed in claim 1, wherein the catalyst is in the form of a shaped body and comprises at least one finely divided, catalytically active metal of group VIII of the Periodic Table of the Elements.

Claim 12. (Original) The process as claimed in claim 1, wherein the distribution of the catalytically active metal in the shaped body is not homogeneous.

Claim 13. (Previously Presented) The process as claimed in claim 1, wherein the shaped body has an outer layer having a thickness of not more than 1/10 of the maximum

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dimension of the shaped body, and more than 70 % by weight of the catalytically active metal is present in this layer.

Claim 14. (Original) The process as claimed in claim 1, wherein the catalyst comprises catalytically active palladium.

Claim 15. (Previously Presented) The process as claimed in claim 1, wherein the molar amount of hydrogen ranges from 0.9 to 1.2 times the amount required to hydrogenate the theoretical amount of cyclododecatriene and cyclododecadiene to cyclododecene.

Claim 16. (Currently Amended) The process as claimed in claim 1, wherein the contacting is carried out at a temperature in the range of ~~from~~ 90 to 180° C.

Claim 17. (Original) The process as claimed in claim 1, wherein the contacting is carried out under an inert gas.

Claim 18. (Original) The process as claimed in claim 1, wherein the contacting is carried out in the presence of hydrogen and carbon monoxide.

Claim 19. (Original) The process as claimed in claim 1, wherein the contacting is carried out in the presence of hydrogen, carbon monoxide and at least one inert gas.

Claim 20. (Original) The process as claimed in claim 1, further comprising:  
vaporizing the starting material in an inert gas atmosphere.

Claim 21. (Previously Presented) The process as claimed in claim 1, wherein the total pressure in the gas phase ranges from 50 to 10,000 hPa.

Claim 22. (Previously Presented) The process as claimed in claim 1, which is carried out continuously.

Claim 23. (Original) The process as claimed in claim 1, wherein the Bodenstein number is greater than 1,000.

Claim 24. (Original) The process as claimed in claim 1, wherein the Reynolds number is greater than 100.

Claim 25. (Previously Presented) The process as claimed in claim 24, wherein the Reynolds number is greater than 200.

Claim 26. (Previously Presented) The process as claimed in claim 1, wherein the throughput per amount of catalyst ranges from 20 to 100 gm of at least one of cyclododecatriene or cyclododecadiene/g Pd•h.

Claim 27. (Original) The process as claimed in claim 1, wherein the catalyst is in the form of a spherical shaped body.

Claim 28. (Original) The process as claimed in claim 1, wherein the catalyst is in the form of a shaped body having a diameter of more than 2 mm.

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Claim 29. (Currently Amended) The process as claimed in claim 1, wherein the contacting is carried out at a temperature in the range of ~~ranging from~~ 100 to 160° C.

Claim 30. (Original) The process as claimed in claim 1, wherein the contacting is carried out in the presence of hydrogen and an inert gas comprising nitrogen.

Claim 31. (Original) The process as claimed in claim 1, wherein the contacting is carried out in the presence of hydrogen and an inert gas comprising nitrogen and carbon monoxide.

Claim 32. (Previously Presented) The process as claimed in claim 1, which is carried out under plug flow conditions.

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REMARKS/ARGUMENTS

Claims 1-32 are active in the case. Reconsideration is respectfully requested.

The present invention relates to a process for the preparation of cyclododecene.

Claim Amendments

Claims 16 and 29 have been amended in order to make minor corrections in language to each of the claims. None of the amendments introduce new matter into the claims. Entry of the amendments into the record is respectfully requested.

It is now believed that the application is in proper condition for issue.

Respectfully submitted,


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